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THE EARLY SILVER COINAGE OF TEOS *

The Athenian Currency Decree of c. 449 B. C. proclaimed the enforcement of standard coinage, weights, and measures throughout the Delian Confederacy. One of the significant legislative acts of Athenian intervention in the domestic affairs of the confederate states, it occurred at a time when Athens was transforming the last vestiges of the Confederacy into an Empire.

Past scholarship has questioned whether the Ionian city of Teos complied with the Decree. Numismatists generally have considered that Teos failed to comply and struck silver coins throughout the fifth century, specifically staters and fractions thereof. E. Babelon in 1910¹ and B. V. Head in 1911², contended that Teos minted continuously throughout the century and in 1918, P. Gardner assented to this view³. As late as 1949 E. S. G. Robinson's study of the coinage in the Delian Confederacy also maintained that Teos minted silver staters throughout the fifth century⁴. Only M. Segré in 1939, expressed the judgment that because Teos was under Persian influence

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¹ E. Babelon, *Traité des monnaies grecques et romaines* II², 1122; «Quant à Teos dont le tribut est de 36 000 drachmes . . ., si elle continue sous l'hégémonie athénienne la frappe de ses statères éginétiques au type du griffon, c'est pour des raisons particulières que nous ignorons», «La Politique monétaire d'Athènes au Ve siècle avant notre ère», *RN* 1913, p. 474.

² B. V. Head, *Historia Numorum* ² (1911), p. 595.

³ P. Gardner, *A History of Ancient Coinage*, pp. 256-258.

⁴ E. S. G. Robinson, «The Athenian Currency Decree and the Coinage of the Allies», *Hesperia* Suppl. VIII (1949), p. 330.

it did not comply with the Decree⁵. The numismatic evidence suggests, however, that Teos did comply with the Decree and this evidence may be reconciled with the political and economic life of the era, especially of the thirty-six years between c. 449/8 and 412 B. C.

As early as the sixth century B. C., Teos actively engaged in commerce and Pan-Ionian affairs⁶. A flourishing sea port involved in Ionian economic expansion and trade, Teos was numbered among the twelve major cities in the Pan-Ionian League⁷. Early in the reign of the Egyptian Pharaoh Amasis (569–525) Teian merchants cooperated in the establishment of the Greek colony and emporium at Naukratis in the Nile Delta⁸. After 545, however, this commercial activity sharply declined when the Persians conquered Ionia and Teos⁹. Rather than submit to Persian rule, many Teians abandoned Ionia, migrated to Thrace, and founded Abdera¹⁰. Those who remained supported the Pan-Ionian League and rebelled against the Persian King Cyrus in 546–540, and against King Darius in 499–494. At the disastrous battle of Lade in 494, where Phokaian Dionysios fought unsuccessfully against the Persians, the Teians manned seventeen ships in addition to the one hundred Chian, eighty Milesian, seventy Lesbian, sixty Samian, twelve Prienian, eight Erythraian and three Phokaian ships¹¹.

Teos remained under Persian control until her liberation by the allied naval forces of the Hellenic League during the summer of 479. With her liberation after sixty six years of Persian rule, Teos contributed to the forces of the allied Greeks and joined the new naval alliance under the leadership of Athens in the winter 478/477. Thus as a member of the Delian Confederacy in good standing, Teos sent an annual payment of six talents to the confederate Treasury¹². This relatively large sum indicates that by the second quarter of the fifth century Teos had regained its prosperity.

The first known record of Teian payment to the Treasury occurs for the year 451/450, three years after the Treasury had been transferred from Delos to Athens and two years before the promulgation of the Decree. There is no record of Teos having contributed manned ships to the Confederacy during the earlier years before turning to a cash payment. The payments after 451/450 indicate that Teos ranked among the group of states which Thucydides labeled as «those who pay tribute» and, in turn, referred to as «subjected states»¹³. This does not necessarily imply that Teos

⁵ M. Segré, «La legge ateniese sull'unificazione della moneta», *Clara Rhodos* IX (1939), p. 172.

⁶ Y. Béquignon and A. Laumonier, «Fouilles de Téos (1924)», *Bulletin de correspondance hellénique* IL (1925), pp. 281–321; P.W. RE, W. Ruge, «Teos», 539–570; F. Stark, *Ionia: A Quest*, pp. 24–32; G. Bean, *Aegean Turkey*, pp. 136–146; C. Roebuck, *Ionian Trade*, p. 12.

⁷ Hdt. i. 170; C. Roebuck, «The Early Ionian League», *CP L* (1955), pp. 26–40.

⁸ Hdt. ii. 178.

⁹ Hdt. i. 168, 170; Roebuck, *Ionian Trade*, p. 136.

¹⁰ Hdt. i. 168; Strabo xiv. 1. 29.

¹¹ Hdt. vi. 8.

¹² *ATL* i. pp. 422–423.

¹³ Thuc. ii. 9.4; iii. 11.1; vi. 85.2; vii. 57.3–4. Cf. i. 99.3, 121.5.

had rebelled against Athens and the Confederacy as had Naxos (c. 467), Thasos (465), Aegina (c. 459)¹⁴, Erythrai (c. 458), and Miletos (c. 454), but on the contrary that Teos was among the many states (about two hundred) which accepted Athenian control and tacitly became part of the Athenian Empire. Both Thucydides and Aristotle explicitly state that only Lesbos, Samos and Chios remained autonomous¹⁵, and, therefore, Teos was not included in this special class of «autonomous» states. The classification of Teos among «those who pay tribute» and were «subjected», suggests that Teos did comply with the articles of the Decree and that her mint was closed c. 449.

The Catalogue of Teian silver coinage for the sixth and fifth centuries struck on the Aeginetic standard includes 130 staters, 29 drachms, 12 triobols, 46 trihemibols, 4 obols, 3 hemiobols, 5 tritemoria, 47 tetartemoria and 4 hemitartemoria. This small collection of coins for a period of a century and a half indicates a less than prolific mint activity due to Teos' economic decline after the Persian conquest of Ionia. The coins essentially represent non-hoarded material with the exception of the tetartemoria and, therefore, a random sampling of the mint productivity. This paucity of specimens fails to produce die linkages for all coins except for three pairs of staters, three obols, and a pair of trihemibols. Consequently, the study of early Teian coinage must be developed on the tenuous and often faulty argument of style.

The staters, the denomination best represented, total 130 specimens, with 57 obverse and 82 reverse types. The obverse dies bear the Teian «Hyperborean» griffin seated right with the left foreleg raised, and the reverse the quartered square incuse. The obverse dies develop progressively from the late archaic types of the sixth century through the fifth century classical style. This early series terminates at the end of the fifth century with the change to the Chian standard and a distinctly fourth century type with the magisterial name on the reverse.

The obverse types progress by adding the initials of the magistrate's names and symbols, the ethnic inscription abbreviated and then in full which, in turn, develops in a stylistic progression of letter forms. The reverse develops similarly from a very rough quartered square incuse with thick partition lines, through a progression in which the partition lines become trim and thinner, the square more uniform and the surfaces of the squares less rough to a pebbly surface. The reverse style changes, temporarily, in the mid-fifth century from that of raised partition lines and pebbly surfaces to indented lines and smooth surfaces, and reverts back to the raised line-pebbly surface form in the late fifth century.

The Catalogue is arranged according to this stylistic progression, with the coins grouped into three Periods: I, II and III. Period I consists of the late archaic series, Period II of the stylistically more developed fifth century series and Period III of the series in the fifth century style distinct from II. Within this progression, one stater

¹⁴ D. MacDowall, «Aegina and the Delian League», *JHS* LXXX (1960), pp. 118–121.

¹⁵ Thuc. i. 19; iii. 10.5; 39.2. Arist. *Atb. Pol.* 24.2; *Pol.* 1284 a 38.

(A. 14. b – P. 24) may be circumstantially dated by its inclusion in the Zagazig Hoard buried after 479 as a drachm (A. 42 – P. 64) from the Demanhur Hoard buried c. 510–500¹⁶. The two hoard coins mark the series of the late sixth-early fifth centuries and the staters and drachms which stylistically precede these two specimens are attributed to the sixth century and the first decades of the fifth. Although an hiatus in minting may have occurred at Teos during the Revolt of 499–494, no considerable stylistic change is observed to warrant the consideration that the hiatus was more than brief, if at all. A stylistic change does occur following the staters of Group XIX (A. 29) and the drachms of Group XX (A. 50), noting the end of the archaic series. Consequently, these staters (Groups I–XIX, A. 1–29) and drachms (Group XX, A. 30–50) of Period I may have a *terminus ante quem* of c. 479–478, coinciding with the Teian liberation and the subsequent economic revival of Ionia. The political and economic events of 479–478 conceivably affected the Teian mint productivity and gave impetus to the refined stylistic developments attributed to Period II. The hoard specimens (A. 14. b and A. 42) of the archaic series of Period I were produced during the last decade of the sixth and the first two decades of the fifth centuries.

The nineteen Groups of staters of Period I bear the griffin seated right in the late archaic style of the sixth century. The griffin of A. 1 is represented well and designed with a slight back bend to the neck and head, and as with A. 2, the raised left forepaw also bends backward slightly. The absence of a magistrate's inscription or symbol, a border and the ethnic inscription, the presence of the late archaic style and the very rough quartered incuse reverses with thick partition lines indicate that these belong to the earliest examples of Teian coinage. The griffin is already well formed and denotes a mid-sixth century *terminus post quem* for this style.

Head thought that the coins of Group I (A. 1–7) belong to the early period, 544 to 494¹⁷, and H. Küthmann (Sylloge v. Aulock) suggests that the stater A. 2 may be dated earlier than 544¹⁸. Babelon's dating of the Teian staters for Period I corresponds

¹⁶ H. Dressel and K. Regling, «Zwei ägyptische Funde altgriechischer Silbermünzen», *ZfN* 37 (1927), pp. 1–138; Zagazig = Noe, *Bibliography of Greek Coin Hoards*², no. 1178; Demanhur = Noe², no. 323. Two Teian staters were included within the Zagazig Hoard, no. 236 (A. 14. b–P. 25) and no. 237. The latter stater, 11,18 g (J. Hirsch 7, 1902, 366, 11,40 g [*sic*]) has not been located. Dressel and Regling identify it as with a griffin seated right, with open mouth, forepaw raised, one wing, in the field perhaps a trace of a symbol and a quartered square incuse with a testmark on the reverse (similar to no. 236). The Hirsch Catalogue dates it early.

The Zagazig Hoard, previously dated c. 490 or shortly after, contains sixteen archaic Athenian tetradrachms (Athena head and owl) and eighteen Athenian tetradrachms of the transitional period (Athena head with olive wreathed helmet and owl with olive leaves and crescent moon). C. Kraay dates the transitional series to the period post-Salamis, «The Archaic Owls of Athens: Classification and Chronology», *NC* 1956, pp. 44–68.

¹⁷ *BMC Ionia*, pp. 309–311.

¹⁸ *SNG von Aulock, Ionien*, 2251.

with the period 545–480. However, for the staters of Periods II–III, Babelon has considered a period extending from 480 to 310¹⁹. A fourth century dating for the staters on the Aeginetic standard can not be considered in the light of a transition c. 407 to the Chian standard which parallels a change in the coinage of Kolophon, Ephesos, Erythrai, Smyrna, Samos and Knidos (the latter only after 394).

The question of when Teos began to mint coins is connected to the development and decline of Teian commerce. Prior to her conquest by Persia, Teos actively participated in eastern Mediterranean trade but without the commercial exchange in terms of her own coinage. Herodotus mentioned that the states which jointly founded the common sanctuary and emporium, the *Hellenion*, at Naukratis were Chios, Teos, Phokaia, Klazomenai, Rhodes, Knidos, Halikarnassos, Phaselis and Mytilene. Outside this organization, Miletos, Samos and Aegina retained their own sanctuaries at Naukratis²⁰. Of these twelve cities, Aegina, Miletos, Samos, Chios, Phokaia and Klazomenai produced coinage by the mid-sixth century and, although Head would include Teos in this early period, the earliest Teian types may not have been struck before the Persian conquest of 544–540. Of the specimens assigned to Period I, most of the series were minted c. 520–478, as evidenced by the inclusion of stater A. 14. b in the Zagazig Hoard. The staters of Groups I–IV, A. 1–12 appear as the earliest forms and, therefore, probably began at the time of the Persian occupation of the city and after 540 when the Revolt was quelled and relative stability returned to Teos.

The staters of Group I, A. 1–P. 1 – A. 7–P. 10 represent the earliest of the Teian coinage, c. 540–520. Their late archaic styles, the absence of borders, inscriptions and symbols, and the rough and broken quartered incuse reverses are similar in type. The bold lines of the griffin A. 7 indicates further the archaic style of its type. Variations in the number of wings, one or two, feathered or unfeathered, in the forms and number of feathers on the wings and neck, in whether the knob on the beak appears, or in the form of the exergue line are not greatly significant.

The staters of Period I are apportioned into four classes as evidenced by the development of the obverse and reverse dies, and the addition of magistrate's names and ethnic inscriptions and symbols. The staters of Group I, A. 1–7 are classified earliest, by reason of the archaic types of the obverse and reverse dies and the absence of inscriptions and symbols. Groups II–IV, A. 8–12 are classed second in progression of the types with the addition of the abbreviated magistrates' names. Groups V–XIII, A. 13–22 without magistrate's or ethnic inscriptions are classified third in consideration of the developed types, placing them later than Groups II–IV, and the innovation of the symbol replacing the inscription as the magistrate's mark, which is the usual form of this reference thereafter. Groups XIV–XIX, A. 23–29 are classified as the latest of Period I, based upon the stylistic development of the types and the addition of the

¹⁹ Babelon, *Traité*, I², 314; II², 1122–1130.

²⁰ *Hdt.* ii. 178; Roebuck, *Ionian Trade*, p. 135.

abbreviated ethnic inscription. The ethnic inscription, however, does not remain constant upon the staters until the late fifth century.

The specimens attributed to Groups II–IV, A. 8–P. 11 – A. 12–P. 16 succeed the style of Group I, with the addition of an inscription. The letters NV, ANA and E refer to the eponymous magistrates. These series are dated later than Group I based on the addition of the magistrate's inscription and on the development of the reverse die; the quartered incuse, although still rough, noticeably tends to be squared – a characteristic quite evident in the later specimens. Following Group I, Groups II–IV date to the period c. 520–510/05.

The specimens of Groups V–XIII (A. 13–22) carry reverse types (P. 17–P. 40) of a quartered square incuse with rough and broken surfaces, similar to the reverse types of the Ionian Revolt issues, 499–494²¹. This reverse type corresponds with those of the tetradrachms of Akanthos which Desneux dates c. 530–500²², with a didrachmon of Erythrai dated before 480²³, with tetradrachms from Abdera (the Teian colony) which May dates c. 492–473/70²⁴ and with coins from Neapolis in Thrace, Orrheskioi, «Lete», and Bisaltai²⁵. Unfortunately no Teian electrum of the Ionian Revolt series can be identified, if in fact it was ever issued²⁶.

The dating of Group VI (A. 14 – P. 21–24) rests with the specimen A. 14. b from the Zagazig Hoard, buried after 479. Desneux's study of the Akanthian coins from this hoard (Zagazig 167–169 = Desneux D 17–18, 26) dates them c. 530–480. In addition, the Thasian coins from the hoard are pre-463, and the Athenian tetradrachms post 507. Consequently, Group VI must be dated c. 510–480.

In relationship to Groups I–IV, the addition of the field symbol (for the issuing magistrate) of Groups V–XIII places these series in an evolutionary step after I–IV, and before Group XIV with its ethnic inscription and magisterial symbol. Similar to Groups I–IV, the specimens of Groups V–XIII do not carry a border, the absence of which also indicates an early date for these series. The development of the reverse

remains rough and often not squared, and the reverses of Group VII (A. 15–P. 25–30) begin to carry the grainy quality of the surface which is common to the later series. The large «windmill» incuse over the quartered square incuse of Group VI (P. 21) is unique. As the other specimens of Group VI (A. 14 – P. 22–24) are of the same obverse die and do not bear the «windmill» incuse, they indicate that the «windmill» is not a major type change for the reverse die but only minor.

The types of Groups XIV–XIX (A. 23–P. 41 – A. 29–P. 48) are assigned to this early group on the basis of the archaic «flavor» of the engraving of the griffin. Group XIII (A. 22), with its flaring «palmette» wings, and groups XIV–XIX (A. 23–29), without the «palmette» wing, bear similar archaic renditions of the griffin which indicate a late sixth-early fifth century form. The introduction of the ethnic inscriptions, the T of Group XIV (A. 23–24), the THIO of Group XVII (A. 27), and the THI of Group XVII–XIX (A. 28–29) mark the transition of this style into that of the fifth century in which the ethnic is common.

Among the specimens of Groups XIV–XIX, the reverse dies (P. 41–48) often remain in the older style of a rough, quartered square incuse. The grainy or pebbly surfaces of the squares become more common as in Group XIV (P. 41–42), XV (P. 44), and XVII (P. 46). In addition, the quarters often contain additional lines enclosing the square within the major axial partition lines, as in P. 37–42, and P. 45. As with the «windmill» incuse, this type also is a minor stylistic change.

The unique example of Group XIX (A. 29–P. 48), with slanted but straight rather than curved wings, must also be placed in this period as based on the close parallel of the style of the griffin's body and the reverse incuse with the thick partition lines and rough surfaces with those of this early period.

The *terminus ante quem* of c. 478 for Period I appears secure. The comparison of the reverse dies of Groups V–XIII to coins of the Ionian Revolt and with the relative date of Group VI as found in the Zagazig Hoard establishes the date for Group VI, c. 510/05–490. The ethnic inscription, which first appears in Group XIV (A. 23–24) and XVII–XIX (A. 27–29), indicates that these series are later developments within Period I. Group XIV (A. 23–24) with its ethnic inscription belongs to a period after Groups V–XIII (A. 13–22), to c. 495/90–478, and dovetails into the series of Periods II and III of the fifth century. The institution of a border exists as a second factor which supports the dating of these series to late Period I. Whereas the border is common to Period II, of those specimens of Period I only Group XIII (A. 22, the «palmette» winged griffin), XVI (A. 26, with a reverse die – P. 45 – containing the additional partition lines to the quartered squares) and XIX (A. 29) bear a border. These, in addition to Group XIV (A. 23–24) and XVII–XIX (A. 27–29) with the ethnic inscription, belong to the transitional decades at the end of Period I, c. 495/90 to 478. Groups XV–XVI are contemporary with Groups XIV (A. 23–24) and XVII–XIX (A. 27–29) in regard to die types.

The numbers of the known drachms, triobols, trihemibobols, obols, and fractions of obols are significantly fewer than even the sparse number of staters. Consequently, an

²¹ A. Baldwin Brett, *The Electrum Coinage of Lampsakos*, p. 27. pl. ii. 1–11; Gardner, «The Coinage of the Ionian Revolt», *JHS* XXI (1911), pp. 151–160; «The Gold Coinage of Asia before Alexander the Great», *Proceedings of the British Academy* III (1908), pp. 13–16.

²² J. Desneux, *Les Tétradrachmes d'Akanthos*, p. 25, pl. v, 2–11, vi. 12.

²³ SNG Copenhagen, *Ionia* I, 554.

²⁴ J. May, *The Coinage of Abdera*, pp. 89–115.

²⁵ A. Baldwin Brett, *Cat. of Gr. Coins BMFA*, Neapolis no. 556–561; Orrheskioi no. 590–593; «Lete» no. 596–597, 603; Bisaltai no. 614–617.

²⁶ The electrum stater (16,57 g) with the griffin's head left and the inscription ΓHOM (in Munich) and fractions noted by J. Brandis, *Das Münz-, Mass- und Gewichtswesen*, Berlin 1866, p. 397 are not Teian but perhaps Phokaian. The other staters listed p. 398 (16,04, 16,02 and 15,88 g), are Kyzikines. Babelon has classed the Munich stater as Phokaian («Études sur les monnaies primitives d'Asie Minor: L'Étalon phocaïque», *RN* 1895, p. 16), but has also read the inscription (*ibid.*, p. 19) ΓHCM as ΓHOM or ΓIOS and representative of Teos. ΓIOS in the nominative, however, is incompatible with the inscription ΓHION in the genitive plural on later Teian coins.

analysis of these denominations to correspond with that of the staters is difficult to compile. If the likelihood exists, however, that these denominations reflect the styles of the staters, the relatively more complete analysis of staters becomes the basis by which the smaller denominations may be analyzed and dated. This analysis is accomplished by comparative studies of the style of the obverse and reverse dies, the field symbols and the ethnic inscriptions.

The available silver drachms total 29 specimens, with 22 obverse types and 25 reverse types. The obverses of Group XX (A. 30–50) bear the familiar griffin in the late archaic style noted on the staters, but without symbols or inscriptions, and would date this Group to the early years of Period I. In addition, the reverse dies (P. 49–72) also compare to those of the early staters of Period I. Specimens A. 30 and A. 31 are the earliest by nature of their rough punch (P. 49–50) rather than the traditional quartered square incuse of the succeeding types. The style of the drachm A. 30 is similar to that of stater A. 1, and perhaps they were contemporary issues. Consequently, the drachms begin c. 540 and continue throughout the period. The dating of drachm A. 42, c. 510–500 is based upon its inclusion within the Demanhur Hoard. The Teian drachms without symbols and inscriptions were struck, therefore, as late as c. 478, whereas symbols and inscriptions occurred on staters as early as c. 520–510/05. The drachm from the Demanhur Hoard (A. 42–P. 64, c. 510–500) appears contemporary with the staters of Groups V–XIII (c. 505/500–490) which are dated by the Zagazig Hoard, and to the coinage of the Ionian Revolt. The other Teian drachm (Group LIX, A. 108) is later as it compares to the staters of Period II.

For Period I, consequently, there are 28 drachms with 21 obverse and 24 reverse dies. For Period II, only a single drachm remains, and no specimens have been attributed to Period III.

The silver triobols total 12 specimens, with 7 obverse and 7 reverse dies. In general, the style of the triobols compares closely with that of the drachms of Period I. The obverse dies bear neither symbol nor inscription, and the reverse dies are the familiar rough quartered square incuse. Eleven specimens, with 6 obverse and 6 reverse dies (Group XXI, A. 51–56) are assigned to Period I and the remaining specimen (Group LX, A. 109) to Period II. For Period III, no specimens have been attributed. Among the triobols of Period I, Group XXI, A. 56 is considered later than the others due to the refinement of the reverse (P. 78) which is a clean quartered square incuse. This specimen, therefore, is dated c. 500–478, while the others may have originated in the late decades of the sixth century.

The silver trihemibols total 46 specimens, with 21 obverse dies and 24 reverse dies. The distribution of the trihemibols is compatible with that of the staters. For Period I, 17 specimens are assigned, with 7 obverse and 7 reverse dies (Groups XXII–XXVI, A. 57–65), and for Period II, 29 specimens, with 13 obverse and 17 reverse dies (Groups LXI–LXXIII, A. 110–122). For Group III, no specimens have appeared.

The specimens A. 57–60 (Group XXII) of the trihemibols of Period I belong to the earliest years, c. 540/30–520, as they bear neither symbol nor inscription, and their reverse dies (P. 79–82) are of the early rough, quartered square incuse type. Group XXIII (A. 61–P. 83) with an uncertain symbol appears to be of the late sixth century rather than of the early fifth. The griffin of the archaic style, with the head and left forepaw tipped back, compares to the griffins on the staters of A. 1 and 2. The trihemibol Group XXIII is to be dated c. 520–510.

The dating of the trihemibols Group XXIV, A. 62–63 is less definite. The obverse borders of specimen A. 62–P. 84 and the grainy surface of the reverse of A. 63–P. 85 indicate a period c. 510–490 when compared to the development of the staters.

Of the silver obols, only 4 specimens have been found and are assigned to Period I, Groups XXVI–XXVIII, A. 64–66. The obols of Group XXVII, A. 65 with the ivy leaf symbol and XXVIII, A. 66 with the possible knucklebone symbol apparently follow the style of the staters of Groups XIV–XVIII (A. 23–28) and, therefore, date to the late Period I, c. 495/90–480. The obol, Group XXVI, A. 64–P. 86 without symbol or inscription, could be earlier as indicated by its rough reverse die. Although the fine quality of the obverse die may indicate its being contemporary with the obols of XXVII–XXVIII, it perhaps dates to the period c. 510/05–490, if not a few years earlier. With so few specimens, however, a study of their stylistic development is difficult.

The minute size of the fractions, hemiobols, tritemoria, retartemoria and hemitartermoria, greatly prevents a careful comparative analysis of the types. In addition to size, the 3 hemiobols, 5 tritemoria and 4 hemitartermoria are too few to be assigned to any period with accuracy. These fractions, however, may date to the later decades of Period I and to the early decades of Period II. The symbols on the hemiobols, Group XXIX, A. 67–68, although unclear as to form, date them to the later years of Period I or to Period II. The pebbly surfaces of the reverse quartered square incuse are present in both periods. The tritemorion, Group XXX, A. 69 with no symbol may bear a border common to the later years of Period I or II. Concerning the hemitartermoria, the virtual impossibility to compare them with the larger specimens other than their reverse dies is indicative of the rough quality of Period I.

The large number of tetartemoria, 47 specimens, is attributed in part to the group of pieces gathered in Kolophon in 1961 (possibly a hoard), and obtained by Münzen und Medaillen AG, Basel, Switzerland²⁷. Because of this relatively large sampling, certain tendencies reminiscent of the larger denominations appear in the reverse types which allow a general division of the specimens into Period I, Group XXXIII, A. 73–P. 95 — A. 80–P. 111, and Period II, Group LXXIV, A. 123–P. 163 — A. 131–P. 185. This division based upon the rough quality of the reverse is far from certain.

The dating of the coins of Period II begins c. 478, the terminal date being c. 449. The Catalogue of staters for Periods I, II and III includes 57 obverse dies. Consider-

²⁷ C. Kraay, «Monnaies provenant du site de Colophon», *RSN* 1962/63, pp. 5–13.

ing the above discussion, 29 obverse die types of staters are assigned to the years c. 540 to c. 478. Twenty-eight obverse types remain for the period c. 478 to c. 407. In comparison to the 29 obverse types of Period I and the anticipation of an abundance of coinage for the fifth century coinciding with the rise in economic prosperity during the *Pentekontaetia*, two to three times the number of known types for the last eighty years of the fifth century is expected. In reality, the small number indicates that something affected the mint at Teos. The paucity of obverse types for the fifth century after Mykale strongly suggests that Athens closed the Teian mint c. 449, removed the Teian coins from circulation and sent them to Athens for reminting according to the articles of the Decree.

The staters of Periods II and III, Groups XXXV–LVIII (A. 84–P. 115 — A. 107–P. 143) and LXXVI–LXXXVII (A. 133–P. 188 — A. 136–P. 191) total 54 specimens, with 28 obverse and 34 reverse dies, denoted by (1) the extensive use of the ethnic THION abbreviated or in full, (2) the fineness in style of the obverse decorations, the griffins and the field symbols, (3) a subtle change in the rendition of the griffin, and (4) the development and fineness of the reverse incuse.

The staters of Groups XXXV–LVIII (A. 84–107) are representative of this type development. The obverse dies usually bear the border (Groups XXXV, A. 84; XXXVII, A. 86; XXXVII, A. 87; XL, A. 89; XLIII, A. 92; XLV, A. 94; XLVIII, A. 97; LIV, A. 103 and LV, A. 104) which is uncommon in Period I.

The ethnic inscription which began in Period I, Groups XIV, XVII–XIX (A. 23–24, A. 27–29) is prominent on most of the stater types of Period II and III, and consistent on the coins of the fourth century.

For Groups XXXV–LVIII (A. 84–107), the fineness and development of the obverse dies as an artistic unit is striking. The flans are rounder than before and the griffin-inscription-symbol complex fills the round surface with a greater harmony of objects one to another than had been previously attempted. The wings balanced with the curved tail, the arched head and left foreleg fill the left and upper fields of the flan in balance to the symbol in the lower right field. The inscription, no longer tucked under the griffin's left foreleg or stomach, becomes the connective unit between the limbs of the griffin and the symbol to create a round decoration on a round flan with a non-round subject. This artistic development indicates a date c. 478–470/65 in contrast to the earlier period c. 495/90–478 in which staters with borders, inscriptions and symbols do occur but lack this developed aesthetic quality. Upon this basis of quality and development the staters of Groups XLVI (A. 95–P. 128) and XLVII (A. 96–128), with their respective magistrate's inscriptions MA Σ , and AM are dated to the early years of Period II, rather than be related to the similar inscriptions of Period I, Groups II–IV, A. 8–12. Although the reverse dies for Groups XXX–LVIII (P. 115–143) are still rough, there is a conscious effort to develop the quartered square incuse punch by defining the squares more carefully than previously had been done.

The staters of Groups LI–LIV, A. 100–P. 132 — A. 103–P. 135, offer a greater aesthetic quality and show a notable attempt to cut better obverse and reverse dies than previously. The development and fineness of the incuse reverses is observable wherein the incuse is the traditional quartered square, but now with smooth incuse surfaces and indented lines rather than the raised partition lines. The fineness of this reverse die — coupled with the developed aesthetic quality of the obverse dies — culminates in the obverse die A. 103 of Group LIV. This die interestingly bears the only female griffin represented among the Teian series of the sixth and fifth centuries.

The first but subtle change in the representation of the griffin is marked with this coin. The left foreleg has lowered from its previously vertical position to an horizontal position over the symbol in the lower right field. This change, however, should not be interpreted as a major change or a stylistic break but rather as a development of style in the second quarter of the fifth century. The correlation of the smooth indented incuse of this coin with the smooth indented incuses of Groups LI–LIII, P. 132–134 dates it to the second quarter of the century, as Groups XXXV–L, P. 115–131, have incuse forms and obverse styles similar to those of the late staters of Period I.

Although the obverses of the staters of Groups LIV–LVIII bear the griffin with the lowered left foreleg (A. 103–107), the reverses (P. 136–143) revert back to types of raised partition lines with pebbly surfaces of the squares. Rather than date these series before those with reverses of smooth surfaces and indented lines, the griffin on the obverse, which is the more important subject on the coin and major factor of continuity rather than the incuse punch, dates these series following Groups XXXVI to LI. The reverse dies of the late fifth and fourth centuries retain the granulated surfaces; and this indicates that the indented lined reverse occurs as a minor innovation in the second quarter of the century, as were the «windmill» reverse and reverses with additional partition lines. Groups LI–LVIII, A. 100–107 must be dated, therefore c. 470/65–449.

A major change in style appears between the staters of Period II and of Period III, with an alteration in the representation of the griffin's wing. From the earliest of the sixth century coins to those of the mid-fifth century, Period I and II, the wing had been rounded, while in Period III the wing is straight. This style of Period III directly precedes the coins of the fourth century struck on the Chian standard which also bear the straight winged griffin (pl. IX, 138, 3.32 ANS).

The staters of Period III, Groups LXXVI–LXXVII, A. 133–187 — A. 136–P. 191, represented by 7 specimens with 4 obverse dies and 5 reverse dies bear a strong similarity to each other. The paucity of coins, the similarity of style, and the absence of specimens of drachms and fractions for Period III suggests that the coinage of this series was struck during a brief period. The stater of Group LXXXVI, A. 133–P. 187 marks the change of style to the straight winged griffin and of the obverse design in which the field symbol moves from its traditional lower right area to first above the griffin and then below. The obverse design of Group LXXVII, A. 134–P. 189 which follows, is uniform for the five staters of the Group (A. 134–P. 189 — A. 136–P. 191)

and is maintained during the fourth century issues on the Chian standard. On the obverse, the griffin to the right stands over a seal facing left, and the ethnic in full appears above the griffin. This position of the griffin and the ethnic perseveres during the fourth century. The reverse dies continue the quartered square incuse of the mid-fifth century with the pebbly surfaces of the squares which is also maintained during the fourth century with the addition of the magistrate's name on the horizontal cross-bar (pl. IX, 138).

Of the coins with straight winged griffins, the exception is the unique coin assigned to Period I, Group XIX, A. 29–P. 48, c. 495/90–480. These coins also bear a griffin with straight wings, however, not in the same style as those of Period III since the style of the head and body of the griffin is closely similar to that of the griffins of the late sixth-early fifth centuries.

The specimens of Period III denote a major stylistic break with those of Period II and are few in number. This evidence indicates a chronological break in minting from the coins of Period II, at a time when the Aeginetic standard was still used in Teos for a short period of time. The environment for these conditions occurred during the late Peloponnesian War.

Following the Athenian catastrophe in Syracuse in 413, the Ionian states, including Teos, revolted against Athens in the spring of 412²⁸. The staters of Group LXXVI, A. 133–P. 187 probably mark the first issues following the revolution and are succeeded by Group LXXVII, A. 134–136. This post-revolutionary coinage continued to be struck on the Aeginetic standard used in Teos before 449. Although Athens regained control of Teos in 412, she did not enforce the then «dead» and ineffectual Currency Decree which demanded that the allies use Athenian currency struck on the Euboic-Attic standard.

Athens' second and ultimate loss of Teos in 407 coincided with the economic crisis in Athens and the necessity to issue Athenian gold and bronze-token coinage²⁹. The year 407 also marked the first year of the *synoecismos* of Rhodes and the rapid expansion of the Chian standard which became more appealing to the Ionian states as a weight measure than the previously enforced Euboic-Attic standard³⁰. With the rising importance of the Chian standard and the military failure of Athens followed by an economic failure, Teos abandoned the Aeginetic standard, began to strike coins on the Chian standard, and modified the die types of the 412–407 coinage slightly to carry the magistrate's name on the reverse horizontal cross-bar.

The change to the Chian standard was widespread in Ionia and Karia and occurred not only in Teos, but in Kolophon, Ephesos, Erythrai, Smyrna, Samos and Knidos (here somewhat later) as well. Ephesos, similar to Teos, began a series in the last decade of the fifth century with a reverse type of a quartered square incuse, with pebbly sur-

²⁸ Thuc. viii. 16.3, 19, 20.2, 31.3.

²⁹ Xen. *Hell.* i. 5.11–15.

³⁰ Diod. Sid. xiii. 75.1; P. Gardner, «Coinage of the Athenian Empire», *JHS* XXXIII (1913), pp. 183–185; *A History of Ancient Coinage*, pp. 298–311.

faces and the horizontal cross-bar bearing the magistrate's name (pl. IX, 139; 1. 69 ANS)³¹.

The numismatic evidence indicates that Athens compelled Teos to close her mint according to the regulations of the Currency Decree and that it remained closed for thirty-six years until Teos revolted from Athenian control in 412. The additional regulation of the Decree which required Teos to submit her currency to Athens for reminting is also evident. The scarcity of drachms and fractions for Period II, in contrast to the number of specimens for Period I, is explained by means of the regulations of the Decree and the consequential collection and reminting of allied currency.

The drachm attributed to Period II, Group LIX, A. 108–P. 144 compares with the staters of Period II, Group LI, A. 100–P. 132 (the owl symbol, and reverse with smooth surfaces and indented lines) and testifies that drachms were minted in the period c. 470/65–449. The single triobol assigned to Period II, Group LX, A. 109–P. 145, compares with the stater A. 86 and to trihemibol A. 113 as all three specimens are marked with the lotus with tendrils symbol and an ethnic inscription. The date of c. 478–470/65 for the stater also applies to the fractions.

Among the remaining thirteen Groups of trihemibols of Period II comparisons with staters are difficult. Trihemibol LXXIII, A. 112 (c. 478–449) may compare with stater XLV, A. 94 (c. 478–470/65) as based on the olive leaf symbol of the trihemibol and the two olive leaves of the stater. Unfortunately, the size of the flan of the trihemibol prevents a careful stylistic analysis and assurance of comparison. Concerning trihemibol LXXIII, A. 122 it may date to c. 470/65–449, as based upon the lowered left foreleg of the griffin and the quartered square incuse reverse with pebbly surfaces (P. 163) which compare to the staters LV–LVIII, P. 136–143 of the late Period II.

No obols, hemiobols or tritemoria may be attributed to Period II, although three hemiobols and five tritemoria assigned to Period I may overlap into Period II. In contrast, the relatively large number of tetartemoria, Group LXXIV allows the assignment of several coins to Period II on the basis of stylistic quality and development. The tetartemoron LXXIV, A. 129–P. 175 bears the late Period II reverse (P. 176–P. 185) of indented lines. This specimen further indicates that fractions were minted within the decade preceding the enactment of the Decree. The single hemitartemoron, Group LXXV, A. 132–P. 186, has been assigned to Period II on the basis of stylistic development, although the minute size of the flan does prevent an accurate attribution.

The 130 staters noted for the sixth and fifth centuries struck on the Aeginetic standard and the drachms and fractions show no significant weight changes. The average weight of 11.76 g remained constant for the staters struck during one hundred and thirty years. Applying Hill's principle that the true weight is most closely

³¹ Head, «On the Chronological Sequence of the Coins of Ephesus», *NC* 1880, pp. 105–112.

approximated by the first high peak of a frequency curve of the plotted weights, the heavier weight of 11,88 g may represent the original average weight of the staters³². Among the fractions the weights remain consistent within each denomination: drachms 5,78 g; triobols 2,84 g; trihemibols 1,34 g; obols 1,15 g; hemibols 0,50 g; tritemoria 0,31 g; tetartemoria 0,21 g; and hemitartemoria 0,084 g. The fractions are clearly in ratio to the staters.

The field symbols on the obverse dies, excluding the griffin, begin in the late sixth century and represent the personal badges of the magistrates. The symbols occur simultaneously with the early abbreviated magistrate's names or proceed them by a few years. This development is succeeded by the addition of the ethnic inscription in the fifth century. The symbols on the staters compare with those on the fractions except for the *litua* which appear on the trihemibol LXVIII, A. 117, do not appear alone on the staters, but do accompany the knuckle-bone which is presented on staters IX, A. 17, XXXIX, A. 88. Common to the staters and the fractions is the apple of stater XIX, A. 29 and trihemibol LXIX, A. 118. The owl symbol of stater LI, A. 100 appears to be contemporary with drachm LIX, A. 108, as do the lotus and tendrils of stater XXXVII, A. 86, tribol LX, A. 109, and trihemibol LXII, A. 111, and the olive leaf of stater XLV, A. 94 and trihemibol LXIII, A. 112. A majority of the fractions, however, bear no symbol which may be due to the size of the flan.

The symbols vary with most of the issues and only occasionally are repeated. The symbols which begin with Group V, A. 13 (c. 510/05–495/90) represent the magistrates under whom the coins were struck, and continue the personal inscriptional identification used temporarily with Groups II–IV, A. 8–12 (c. 520–510/05). Within Period II, the staters of Groups XXXV–XXXVI (A. 86–87) and XLII (A. 91), (c. 478–470/65), bear the symbol of grain, and although they are personal marks, the grain symbol may have been influenced by the grain shortage in Teos during the decade following Mykale (Public Imprecations at Teos, c. 475–470: Tod GH I², 23, lines 6–12).

The owl borne by the staters, Group LI, A. 100 (c. 470/65–449), and the drachm, Group LIX, A. 108 is strikingly similar to the owl which appears on Athenian coins, but must be interpreted as the badge of the magistrate rather than specifically indicating the allied relationship between Athens and Teos. To many Teians, however, the owl may have symbolized the patron deity of Athens. Similarly, the bee in the field of Group LXXVI, A. 133, Period III (c. 412) may have recalled the Ionian revolt from Athens of that year and the role played by Ephesos (with the bee heraldic badge, the symbol of Artemis), a neighbour of Teos³³. The seal borne on the remaining staters of Period III (A. 134–136) indicates the relationship with the Ionian state of Phokaia, with which Teos had maintained a long close association.

The paucity of specimens for all denominations for the sixth and fifth centuries produces only five die linkages. Reverse dies link three pairs of staters. The die P. 14 links staters II, A. 10 and III, A. 11 (c. 520–510/05); and P. 117 links staters XXXVII, A. 86 and XXXVIII, A. 87 (c. 478–470/65). Staters XLVI, A. 95 and XLVII, A. 96 (c. 478–470/65) are linked by a common reverse, P. 128, and the respective obverse inscriptions, MA Σ \rightarrow *mu, alpha mu*, and AM \leftarrow *mu alpha* indicate further that the coins were produced during the administration of the magistrate Mam... A fourth linkage occurs among the triobols, with which the obverses of Group XXI, A. 52–P. 74 and A. 52–P. 75 are common, and the reverse of A. 52–P. 75 is common to A. 53–P. 75 (c. 500–478). The fifth linkage occurs with the trihemibols LXII, A. 111 and A. 112 joined by the common reverse P. 148 (c. 478–449). Whether a linkage appears among the staters of Groups LI–LIV (c. 470/65–449) is not certain but possible by the nature of the reverse quartered square incuse with smooth surfaces and indented lines.

Three additional specimens, not previously mentioned, raise an interesting problem. Babelon noted a strange coin which he identified as an issue commemorating an alliance between Teos and Kos some time after 479 (?), a barbaric issue with a griffin (*sic*) facing right on the obverse and a crab within a punch on the reverse (pl. IX. 137)³⁴. The obverse creature, however, is a sphinx rather than a griffin and Dressel and Regling, discussing a specimen of this type found in the Demanhur Hoard, noted the inscription upon the obverse: $\Lambda\Phi\Psi$ ³⁵. The weights of three coins of this type, 9,36, 9,40, and 9,41, indicate a non-Teian origin, and the dies a non-Teian prototype (probably Lykian³⁶).

In conclusion, this study demonstrates that the Ionian city of Teos began to mint silver coins on the Aeginetic standard early in the second half of the sixth century and continued to mint throughout the period of Persian control and the early years of the Delian Confederacy. With the promulgation of the Athenian Currency Decree c. 449, Athens closed the mint at Teos and it remained closed for thirty-six years until 412, when Teos and Ionia revolted against Athens. The new Teian coins maintained the Aeginetic standard for six years, until 407, when the Chian standard was adopted.

³⁴ Babelon, *Traité*, I², 321–322, no. 511.

³⁵ Dressel and Regling, *Zwei ägyptische Funde*, *ZfN* 37 (1927), pp. 70–71.

³⁶ 9,36. Paris (Mionnet, *Suppl. IX*, p. 237, n. 68, pl. x. 21); 9,40. Paris (Dieudonné, *RN* 1905, p. 460, n. 1); 9,41. Paris (*Traité*, I², 511).

³² G. F. Hill, *The Frequency-Table*, *NC* 1924, p. 80.

³³ Thuc. viii. 14–19.

SUMMARY OF ISSUES

Group	Inscription	Obverse Symbol	Specimens Recorded	Number of Obverse Dies	Number of Reverse Dies
<i>Period I</i> c. 540-478 B. C.					
<i>Staters</i>					
c. 540-520					
I	-	-	12	7	10
c. 520-510/05					
II	NV	-	9	3	5]
III	ANA	-	1	1	1]
IV	E	-	3	1	1
c. 510/05-495/90					
V	-	swan	7	1	4
VI	-	lotus	5	1	4
VII	-	grapecluster and leaf	10	1	6
VIII	-	cock	3	1	1
IX	-	knuckle-bone	2	1	1
X	-	heron	1	1	1
XI	-	ant (?)	1	1	1
XII	-	uncertain	2	2	2
XIII	-	club	6	1	4
c. 495/90-478					
XIV	T	line	6	2	3
XV	-	club	3	1	1
XVI	-	eagle on base, apple (?)	1	1	1
XVII	THIO	dog (?)	1	1	1
XVIII	THI	-	1	1	1
XIX	THI	club and apple	2	1	1
<i>Drachms</i>					
c. 540-478					
XX	-	-	28	21	24
<i>Triobols</i>					
c. 540-500					
XXI. A. 51-A. 55	-	-	10	5	5
c. 500-478					
XXI. A. 56	-	-	1	1	1
<i>Tribemiobols</i>					
c. 540/30-520					
XXII	-	-	6	4	4
c. 520-510					
XXIII	-	uncertain	1	1	1

Group	Inscription	Obverse Symbol	Specimens Recorded	Number of Obverse Dies	Number of Reverse Dies
c. 510-490					
XXIV	-	-	5	1	1
XXV	TH	-	3	1	1
<i>Obols</i>					
c. 520-490					
XXVI	-	-	2	1	1
c. 495/90-478					
XXVII	-	ivy leaf	1	1	1
XXVIII	-	knuckle-bone	1	1	1
<i>Hemiobols</i>					
c. 540/30-478					
XXIX	-	uncertain	3	2	2
<i>Tritemoria</i>					
c. 540/30-478					
XXX	-	-	1	1	1
XXXI	-	lotus	2	1	1
XXXII	-	uncertain	2	2	2
<i>Tetartemoria</i>					
c. 540/00-478					
XXXIII	-	-	24	8	17
<i>Hemitartemoria</i>					
c. 540/00-478					
XXXIV	-	-	3	3	3
<i>Period II</i> c. 478-449 B. C.					
<i>Staters</i>					
c. 478-470/65					
XXXV	THI	grain	2	1	1
XXXVI	THION	grain	1	1	1
XXXVII	THI	lotus	1	1	1]
XXXVIII	THI	-	1	1	1]
XXXIX	-	knuckle-bone	1	1	1
XL	THION	tortoise	5	1	3
XLI	-	tortoise	1	1	1
XLII	THIO	grain	1	1	1
XLIII	THI	foot	5	1	1
XLIV	THI	-	1	1	1
XLV	THI	olive leaves	2	1	2
XLVI	MA Σ	stag's head	4	1	1]
XLVII	AM	-	1	1	1]
XLVIII	-	winged horse forepart	1	1	1

Group	Inscription	Obverse Symbol	Specimens Recorded	Number of Obverse Dies	Number of Reverse Dies
IL	TN	—	2	1	1
L	—	dolphin	1	1	1
c. 470/65-449					
LI	—	owl	4	1	1
LII	—	swan	1	1	1
LIII	THION	grapecluster	1	1	1
LIV	THION	panther's head	2	1	1
LV	THION	ram's head	2	1	2
LVI	—	satyr's head	3	1	3
LVII	—	satyr's head	2	1	2
LVIII	—	caduceus	2	1	1
<i>Drachms</i>					
c. 470/65-449					
LIX	THION	owl	1	1	1
<i>Triobols</i>					
c. 478-470/65					
LX	T	lotus	1	1	1
<i>Tribemiobols</i>					
c. 478-449					
LXI	T	griffin's head	2	1	2
LXII	T	lotus	3	1	1
LXIII	T	olive leaf	2	1	2
LXIV	—	—	1	1	1
LXV	—	uncertain	1	1	1
LXVI	T	scallop	4	1	3 (?)
LXVII	T	ivy leaf	1	1	1
LXVIII	—	knuckle-bone	5	1	1
LXIX	—	apple (?)	5	1	2
LXX	T	ant	1	1	1
LXXI	—	dolphin	2	1	1
LXXII	—	animal (?)	1	1	1
LXXIII	—	—	1	1	1
<i>Tetartemoria</i>					
c. 478-449					
LXXIV	—	—	23	9	23
<i>Hemitartemoria</i>					
c. 478-449					
LXXV	—	—	1	1	1
<i>Period III</i>					
412-407 B. C.					
<i>Staters</i>					
412-407					
LXXVI	THION	bee	2	1	2
LXXVII	THION	seal	5	3	3

Abbreviations

nwg	no weight given
quar. sq.	quartered square
SNG	Sylloge Nummorum Graecorum: von Aulock, Berry, Cambridge, Copenhagen, Lockett
SNR	Schweizerische Numismatische Rundschau
ZfN	Zeitschrift für Numismatik (Berlin)

Collections

ANS	American Numismatic Society, New York
BMC	British Museum, London. A Catalogue of the Greek Coins, Ionia 1892
Brett	Museum of Fine Arts, Boston, Catalogue of Greek Coins, by Agnes Baldwin Brett, 1955
De Luynes	Catalogue de la collection de Luynes III (Paris) 1930, par Jean Babelon
Jameson	Collection R. Jameson, Monnaies grecques antiques, Paris 1913 ss.
Mc Clean	Catalogue of the Mc Clean Collection of Greek Coins III (Fitzwilliam Museum, Cambridge), by S. W. Grose, 1929
Nanteuil	Collection de monnaies grecques, H. De Nanteuil, Paris 1925
Warren	Die griechischen Münzen der Sammlung Warren, von Kurt Regling, Berlin 1906
H. Weber	The Weber Collection (Sir Hermann Weber) III ¹ by L. Forrer, London 1926

Publications

Babelon	Ernest Babelon, <i>Traité des monnaies grecques et romaines</i> , Paris 1907-1932 (Teos: I ² , nos 495-511; II ² nos 1930-1955)
Gardner	Percy Gardner, <i>A History of Ancient Coinage</i> , Oxford 1918
Ward	John Ward, <i>Greek coins and their Parent Cities</i> , London 1902

Sale catalogues
(numbered series)

Cahn	Adolph E. Cahn, Frankfurt a. M. 66: 6th May 1930 68: 26th November 1930 (Simon)
Egger	Brüder Egger, Vienna 39: 15th January 1912 (Kaiserhaus) 46: 14th May 1914 (Prowe III)
Hess-Leu	Adolph Hess AG - Bank Leu AG, Lucerne 3: 27th March 1956 31: 6th December 1966 36: 17th April 1968
Hirsch	Jacob Hirsch, Munich 7: 2nd June 1902 13: 15th May 1905 (Rhousopoulos) 16: 6th December 1906 20: 13th November 1907 (Hoskier) 21: 16th November 1908 (Consul E. F. Weber) 25: 29th November 1909 (Philipsen) 30: 11th May 1911 (Barron)

Naville - Naville L. - *Ars Classica* (Jacob Hirsch) Geneva, sales in Lucerne
 Ars Classica 1: 4th April 1921 (Pozzi)
 4: 27th June 1922 (Michailovitch-Evans)
 5: 18th June 1923 (British Museum Duplicates)
 7: 23th June 1924 (Bement II)
 10: 15th June 1925 (Petrowicz-Rogers)
 12: 18th October 1926 (Wertheim c. a.)
 13: 27th June 1928 (Allatini c. a.)
 14: 2nd July 1929 (Spencer Churchill)

Aegimetic Standard

Griffin seated r.; jaws open, tongue protruding; often knob on beak; large ear(s); curved wing(s) in two or three sections, feathered and plain; left foreleg raised vertically. Rev. Quartered square incuse.

Asterisk indicates specimen illustrated.

PERIOD I
 c. 540-478 B. C.

Staters
 c. 540-520

GROUP I
 No inscription, no symbol

- 1 A. 1 Single wing, beaded exergue.
 P. 1 Rough and broken, thick partition lines.
 * a) 11,50 ANS.
- 2 A. 2 Wing feathered more than A. 1.
 P. 2 Similar.
 * a) 12,02 SNG von Aulock 2252.
- 3 A. 3 Plain exergue.
 P. 3 Badly broken.
 * a) 11,82 ANS ex R. Ratto April 1927, 1982.
 b) 11,62 Egger 46, 1064; R. Ratto May 1912, 961.
- P. 4 Similar.
 a) 11,34 Naville - *Ars Classica* 13, 1816.
- P. 5 Similar.
 a) 11,60 Bourgey June 1959, 449.

- 4 A. 4 Griffin seated rather than slightly raised, no exergue.
 P. 6 Thin partition lines.
 * a) 11,65 SNG von Aulock 2251.
- 5 A. 5 Two wings, double beaded exergue.
 P. 7 Similar.
 * a) 11,46 Paris. Babelon 495.
- 6 A. 6 Single wing, long body low.
 P. 8 Rough, thick partition lines.
 * a) 11,61 Budapest.
 b) 11,76 Paris. Babelon 504.
- 7 A. 7 Heavy engraved lines, (?) exergue.
 P. 9 Quar. sq. incuse.
 * a) 11,875 Berlin.
- P. 10 Similar.
 a) 11,705 Berlin.

GROUP II

c. 520-510/05

NV, no symbol

- 8 A. 8 Single wing, beaded exergue with inscription above.
 P. 11 Rough surfaces, thick partition lines.
 * a) 11,775 Munich.
 b) 11,31 Boston. Brett 1936, Warren 1132.
 c) 11,68 Paris. Babelon 502.
- P. 12 a) 11,07 Berlin (clipped on top).
- 9 A. 9 Slightly heavier body, wing not as large as A. 8.
 P. 13 Rough.
 * a) 11,75 R. Ratto June 1929, 492.
 b) 11,93 Paris. Babelon 503.
- 10 A. 10 Wing slightly longer than A. 9.
 P. 14 Rough, thick partition lines.
 * a) 11,88 Leningrad ex Sotheby December 1896, 201.
 b) 12,00 Athens.
- P. 15 Similar.
 a) 11,97 Bourgey June 1959, 500.

GROUP III

A / NA, no symbol

- II A. 11 Single wing, beaded exergue with A above, NA (vertical) in lower right field.
 P. 14 Die-break larger.
 * a) 11,76 Berlin.

GROUP IV

E, no symbol

- 12 A. 12 Single wing, plain exergue, inscription in lower right field.
 P. 16 Rough.
 * a) 11,65 ANS.
 b) 11,45 Paris. Babelon 500.
 c) 11,57 Stockholm.

GROUP V

510/05-495/90

No inscription, swan

- 13 A. 13 Plain exergue over beaded line, symbol in lower right field.
 P. 17 Not square, thick partition lines.
 a) 11,29 Boston. Brett 1937. Warren 1133.
 P. 18 Similar, thin partition lines.
 * a) 11,46 Paris.
 b) 11,38 Oxford. Hess December 1931, 207; Münzhandlung Basel 10, 333; Münzen und Medaillen AG Basel, List 141, December 1954, 13.
 P. 19 Similar.
 a) 11,695 Munich.
 b) 11,28 SNG Copenhagen 1437.
 c) 11,42 Merzbacher November 1908, 3096.
 P. 20 Similar.
 a) 11,63 Dewing Coll., Cambridge, Mass.

GROUP VI

No inscription, lotus

- 14a A. 14 Plain exergue, symbol in lower right field.
 P. 21 Quar. sq. incuse, with large «windmill» incuse over.
 * a) 11,81 Paris. Naville - Ars Classica 7, 1488.
 b) 11,96 H. Weber 6201.
 P. 22 Quar. sq. incuse, similar to P. 18.
 a) 11,40 G. Hirsch October 1962, 2421.
 P. 23 Similar.
 a) 11,60 Paris. De Luynes 2663.
 14b P. 24 Similar (test mark).
 * a) 12,02 Berlin. Zagazig Hoard, ZfN 37 (1927), 236.

GROUP VII

No inscription, grape cluster and leaf

- 15 A. 15 Two wings, plain exergue, symbol in lower right field.
 P. 25 Rough and grainy surfaces.
 a) 11,86 Boston. Brett 1938, Warren 1134.
 b) 11,77 London. BMC 4.
 c) 11,82 Oxford. Naville - Ars Classica 5, 1923. 2592 ex British Museum and Collection Payne Knight.
 P. 26 Similar.
 a) 11,46 SNG von Aulock 2254.
 P. 27 Rough and broken.
 a) 11,80 SNG Lockett 2851. Naville - Ars Classica 1, 2517; Rollin et Feuillard September 1913, 290; Glendining February 1961, Lockett 2329.
 b) 11,38 Jameson 1516. J. Hirsch 21, 3000; Hess-Leu 3 (1956), 310.
 * c) 12,00 Berlin.
 P. 28 Similar.
 a) 11,82 Nanteuil 613.
 P. 29 Similar.
 a) 11,97 Athens.
 P. 30 Similar.
 a) 11,841 Cambridge. SNG 4587.

GROUP VIII

No inscription, cock

- 16 A. 16 Beaded exergue, symbol in lower right field.
 P. 31 Rough and broken.
 * a) 11,845 Vienna.
 b) 11,94 Paris. De Luynes 2664, Babelon 501.
 c) 10,86 Cast in Winterthur (M. Tur. 2003).

GROUP IX

No inscription, knuckle-bone

- 17 A. 17 Single wing, «tongue and dart» exergue, symbol in lower right field.
 P. 32 Similar.
 a) 11,789 Munich.
 * b) 11,90 Swiss - Private Collection. Münzhandlung Basel 4, 817.

GROUP X

No inscription, heron

- 18 A. 18 Plain exergue, symbol in lower right field.
 P. 33 Similar.
 * a) 11,87 Berlin.

GROUP XI

No inscription, ant. (?)

- 19 A. 19 Ant (?) in lower right field.
 P. 34 Similar.
 * a) 11,96 H. Weber 6200.

GROUP XII

No inscription, symbol uncertain

- 20 A. 20 Beaded exergue, symbol in lower right field.
 P. 35 Quar. sq. incuse, additional partition lines.
 * a) 11,42 SNG Copenhagen 1436.
 21 A. 21 Plain exergue, symbol in lower right field.
 P. 36 Rough and broken, additional partition lines.
 * a) 9,729 Paris.

GROUP XIII

No inscription, club

- 22 A. 22 Two flaring «palmette» wings, border, symbol in lower right field.
 P. 37 Additional partition lines, quarters alternate heavy and fine pebbly surfaces, similar to P. 37.
 * a) 11,73 ANS ex Naville - Ars Classica 7, 274; Bourgey May 1910, 110.
 P. 38 Similar.
 a) 11,63 London. BMC 7.
 P. 39 Similar.
 a) 11,58 Paris. Babelon 1947.
 b) 11,50 Berlin.
 c) 10,26 J. Hirsch 13, 3807.
 P. 40 Similar.
 a) 10,91 Munich (test-marks on obv.).

c. 495/490-478

GROUP XIV

T, line

- 23 A. 23 Two wings, beaded exergue with inscription above, beaded line from stomach down right to ex.
 P. 41 Similar.
 a) 11,62 Casts in Winterthur (Stock Leu 1958).
 * b) 11,67 Cambridge. Mc Clean 8342 ex Sotheby February 1909, 692.
 c) nwg. Num. Fine Arts March 1953, 47.

- P. 42 Similar.
 a) 11,30 London. BMC 9.

- 24 A. 24 Single wing, plain exergue with inscription above, line from left fore-elbow down right.
 P. 43 Neat quar. sq. incuse, rough surfaces.
 * a) 11,60 ANS ex Helbing November 1938, 4036.
 b) 11,95 London. BMC 3.

GROUP XV

No inscription, club

- 25 A. 25 Two wings, short neck, both forelegs down, symbol in lower right field.
 P. 44 Thick partition lines, rough surfaces.
 * a) 11,90 London. BMC 2. Gardner pl. III. 4; Babelon 499.
 b) 11,901 Munich.
 c) 11,80 Vienna.

GROUP XVI

No inscription, eagle standing on base, with apple (?) above exergue

- 26 A. 26 Two wings, plain exergue over beaded, border, apple (?) above exergue, symbol in lower right field.
 P. 45 Additional partition lines, pebbly surfaces.
 * a) 11,74 Paris. J. Hirsch 13, 3806; J. Hirsch 25, 2222; Egger 46, 1065; Naville - Ars Classica 7, 1490.

GROUP XVII

THIO \, dog (?) leaping r.

- 27 A. 27 Two wings, plain exergue, inscription around, dog (?) leaping upwards r. in lower right field.
 P. 46 Quar. sq. incuse, fine pebbly surfaces.
 * a) 11,90 Boston. Brett 1940, Warren 1136.

GROUP XVIII

THI | , no symbol

- 28 A. 28 Similar, inscription vertical in lower right field.
 P. 47 Quar. sq. incuse.
 * a) 11,829 Berlin.

GROUP XIX

THI →, club and apple

- 29 A. 29 Two wings, straight and slanting up, exergue, border, inscription below body, symbols in lower right field.
 P. 48 Thick partition lines, surfaces rough.
 * a) 11,70 Oxford.
 b) 11,87 Cambridge. Mc Clean 8346.

Drachms

c. 540-478

GROUP XX

No inscription, no symbol

- 30 A. 30 Single wing, thin curved neck, head back.
 P. 49 Sq. punch, very rough and broken.
 * a) 5,94 ANS ex H. Weber 6197.
- 31 A. 31 Similar, high haunch, beaded exergue.
 P. 50 Similar.
 * a) 5,75 ANS ex J. Schulman November 1913 (Van Belle), 2584;
 J. Schulman list 62 (1915), 315.
- A. 32 Single wing, head straight.
 P. 51 Similar.
 a) 5,78 Hess-Leu 31, 433.
- 33 A. 33 Head slightly back, short body.
 P. 52 Quar. sq. incuse, thin partition lines.
 * a) 5,767 Munich.
- 34 A. 34 Single small wing, protruding tongue, fully seated body raised high.
 P. 53 Quar. broken incuse, similar to P. 3.
 * a) 5,91 J. Hirsch 30, 571; Naville - Ars Classica 7, 1483; J. Schulman
 June 1930, 132.
- P. 54 Similar.
 a) 5,86 Cambridge. Mc Clean 8341.
- P. 55 Similar.
 a) 5,85 Babelon 496.
- 35 A. 35 Similar.
 P. 56 Quar. sq. incuse, rough.
 * a) 5,85 J. Hirsch 25, 2220.
 b) 5,87 Rollin et Feuarent-Holzhausen 2319a.
- 36 A. 36 Back raised higher, wing more acutely turned upward.
 P. 57 Similar.
 * a) 5,73 Naville - Ars Classica 1, 2516.
- 37a A. 37 Body elongated low, head raised high, beaded exergue.
 P. 58 Thick partition lines.
 * a) 5,75 Berlin.
 b) 5,68 Platt March 1922, 651; Bourgey June 1959, 498.
 c) 5,83 Naville - Ars Classica 12, 1817.
- 37b P. 59 Similar.
 * a) 5,775 Berlin.
- 38 A. 38 Short body, tongue on lower jaw, exergue.
 P. 60 Quar. sq. incuse, rough.
 * a) 5,80 J. Hirsch 20, 545.
- 39 A. 39 Short wing, plain exergue over beaded.
 P. 61 Similar, very rough and broken.
 * a) 5,72 Boston. Brett 1934. Warren 1130.
- 40 A. 40 Wing in four sections, ruff about neck, large upper beak.
 P. 62 Quar. sq. incuse, rough.
 * a) 5,78 Berlin.
 b) 5,78 Dewing Coll., Cambridge, Mass.
- 41 A. 41 Beaded exergue.
 P. 63 Quar. sq. incuse.
 * a) nwg. Spink, London.
- 42 A. 42 Single wing, left forepaw shortened.
 P. 64 Similar.
 * a) 5,86 Berlin. Demanhur Hoard, ZfN 37 (1927), 104 ex J. Hirsch 7, 367.
- 43 A. 43 Head straight up, mouth open wide.
 P. 65 Rough and broken.
 * a) 5,81 Berlin.
- 44 A. 44 Long single wing.
 P. 66 Similar.
 * a) 5,77 Vienna.
- 45 A. 45 Feathered ruff below ear.
 P. 67 Similar.
 * a) 5,83 London. BMC 1.
- 46 A. 46 Fully seated, high back.
 P. 68 Rough.
 * a) 5,63 SNG von Aulock 2255.
- 47 A. 47 High rise to body.
 P. 69 Quar. sq. incuse.
 * a) 5,90 SNG Copenhagen 1433.

- 48 A. 48 Thick neck, beaded exergue.
 P. 70 Similar.
 * a) 5,84 Berlin.
- 49 A. 49 Bar tipped back, right foreleg back and below body.
 P. 71 Rough.
 * a) 5,81 Budapest.
- 50 A. 50 Elongated body, large ear, left forepaw raised but low on body.
 P. 72 Rough.
 * a) 5,69 SNG von Aulock 2256.

Triobols

c. 540-500

GROUP XXI

No inscription, no symbol

- 51 A. 51 Two ears separated, feathered ruff below ears, both forelegs down.
 P. 73 Quar. sq. incuse, rough and broken.
 * a) 2,90 J. Hirsch 13, 3804; Naville - Ars Classica 7, 1484.
- 52a A. 52 Large head, open beak, feathered ruff below ear, tail close to body,
 both forelegs down.
 P. 74 Similar.
 * a) 2,96 London.
 b) 2,635 Munich.
 c) 2,65 H. Weber 6198.
 d) 3,00 ANS.
- 52b A. 52 Same die.
 P. 75 Similar.
 * a) 2,85 Vienna.
- 53 A. 53 Short curved single wing, feathered ruff below ear, high arch to back,
 both forelegs down, beaded exergue.
 P. 75 Same die.
 * a) 2,94 London.
 b) 2,97 SNG Copenhagen 1434.
- 54 A. 54 Large ear, feathered ruff below, raised body, plain exergue.
 P. 76 Similar.
 * a) 2,96 London.
- 55 A. 55 Beaded exergue.
 P. 77 Similar.
 * a) 2,83 Boston. Brett 1935, Warren 1131 ex Sotheby March 1889, 380.

c. 500-478

- 56 A. 56 Griffin walking advancing forward, right legs back.
 P. 78 Quar. sq. incuse.
 * a) 2,83 Dewing Coll., Cambridge, Mass. Naville - Ars Classica 7, 1485.

Tribemiobols

c. 540/30-520

GROUP XXII

No inscription, no symbol

- 57 A. 57 High arch to back of griffin.
 P. 79 Quar. sq. incuse, very rough.
 * a) 1,46 SNG Copenhagen 1435.
 b) 1,48 H. Weber 6199.
- 58 A. 58 Short wing distinctly feathered.
 P. 80 Similar.
 * a) 1,41 Leningrad.
- 59 A. 59 High, single wing, large ear, high haunch.
 P. 81 Similar.
 * a) 1,48 London.
- A. 60 Single wing, small features, both forelegs down.
 P. 82 Similar.
 a) 1,50 Oxford. Naville - Ars Classica 7, 1486.
 b) 1,40 ANS.

c. 520-510

GROUP XXIII

No inscription, symbol uncertain

- 61 A. 61 Two wings, head and forepaw tipped back, uncertain symbol in
 lower right field.
 P. 83 Quar. sq. incuse.
 * a) 1,25 Hague.

c. 510-490

GROUP XXIV

No inscription, no symbol

- 62 A. 62 Single wing in two sections, beaded exergue.
 P. 84 Thick partition lines, rough surfaces.
 a) 1,40 Oxford. H. Weber 6209 ex Naville - Ars Classica 1, 2522.

- b) 1,25 Cambridge. Mc Clean 8344.
- * c) 1,23 SNG Berry 1090.
- d) 1,31 SNG von Aulock 2258.
- e) 1,404 Munich.

GROUP XXV

TH / ,no symbol

- 63 A. 63 Beaded exergue and border, inscription left and above griffin.
- P. 85 Fine pebbly surfaces.
- * a) 1,12 Vienna.
- b) 1,38 London. BMC 12. Babelon 518.
- c) 1,24 Cahn 66, 320.
- d) 1,31 Oxford. Naville - Ars Classica 1, 2523.
- e) 1,25 ANS.

Obols

c. 520-490

GROUP XXVI

No inscription, no symbol

- 64 A. 64 Single wing plain, beak slightly open.
- P. 86 Quar. sq. incuse, rough surfaces.
- * a) nwg. Spink.
- b) 1,23 ANS.

c. 495/90-478

GROUP XXVII

No inscription, ivy leaf

- 65 A. 65 Two wings, plain exergue, symbol in lower right field.
- P. 87 Similar.
- * a) 1,19 London. BMC 14.

GROUP XXVIII

No inscription, knuckle-bone

- 66 A. 66 Two wings, symbol in lower right field.
- P. 88 Similar.
- * a) 1,12 Cambridge. Mc Clean 8345.

Hemiobols

c. 540/30-478

GROUP XXIX

No inscription, symbol uncertain

- 67 A. 67 Two wings, uncertain symbol in lower right field.
- P. 89 Pebbly surfaces.
- * a) 0,54 SNG Copenhagen 1442.
- b) 0,54 SNR XLII, p. 9, 109.
- 68 A. 68 Body shorter, uncertain symbol in lower right field.
- P. 90 Similar.
- * a) 0,56 London. BMC 15. H. Weber 6212.

Tritemoria

c. 540/30-478

GROUP XXX

No inscription, no symbol

- 69 A. 69 Large ear, long neck, high haunch to body, beaded border (?).
- P. 91 Quar. sq. incuse, rough and broken.
- * a) 0,29 H. Weber 6213.

GROUP XXXI

No inscription, lotus

- 70 A. 70 Similar, symbol in lower right field.
- P. 92 Quar. sq. incuse, surfaces striated.
- a) 0,27 Oxford. SNR XLII, p. 9, 110.
- * b) 0,29 Balcer Coll., Bloomington, Ind.

GROUP XXXII

No inscription, symbol uncertain

- 71 A. 71 Low haunch, left foreleg raised, paw horizontal, plain exergue, symbol in lower right field.
- P. 93 Small quar. sq. incuse.
- * a) 0,32 Balcer Coll., Bloomington, Ind.
- 72 A. 72 Single wing, rear raised, left forepaw horizontal.
- P. 94 Quar. sq. incuse, pebbly surfaces.
- * a) 0,32 Oxford.

GROUP XXXIII

No inscription, no symbol

- 73 A. 73 Griffin's head r., one long ear slightly forward, tongue slanting down.
P. 95 Quar. sq. incuse, rough.
* a) 0,23 ANS.
- 74 A. 74 Mouth half open, tongue curved up.
P. 96 Similar.
a) 0,19 Münzen und Medaillen AG, Basel (cast ANS).
- 75 A. 75 Ear straight up, mouth half open, tongue projecting forward.
P. 97 Similar.
* a) 0,22 ANS.
- A. 76 Ear behind, large round head, prominent hooked beak.
P. 98 Similar.
a) 0,26 Münzen und Medaillen AG, Basel (cast ANS).
- A. 77 Large round head, long tongue curved down.
P. 99 Similar.
a) 0,18 Münzen und Medaillen AG, Basel (cast ANS).
- A. 78 Arch to head, one ear, lower jaw curved down, tongue slightly down.
P. 100 Similar.
a) 0,21 Münzen und Medaillen AG, Basel (cast ANS).
- P. 101 Similar.
a) 0,20 Münzen und Medaillen AG, Basel (cast ANS).
- 79 A. 79 Thick neck, knob, lower jaw down, tongue curved to upper bill.
P. 102 Similar.
a) 0,24 Münzen und Medaillen AG, Basel (cast ANS).
- P. 103 Similar.
a) 0,21 Münzen und Medaillen AG, Basel (cast ANS).
- P. 104 Similar.
a) 0,23 Münzen und Medaillen AG, Basel (cast ANS).
- P. 105 Similar.
a) 0,24 Münzen und Medaillen AG, Basel (cast ANS).
- P. 106 Similar.
a) 0,12 Münzen und Medaillen AG, Basel (cast ANS).
- P. 107 Similar.
a) 0,22 ANS.
- P. 108 Similar.
* a) 0,24 Balcer Coll., Bloomington, Ind.
- P. 109 Similar.
a) 0,227 Yale.

- 80 A. 80 Ear forward, flat head, eye forward on beak, mouth wide open, tongue down.
P. 110 Quar. sq. incuse, quasi-windmill.
* a) 0,206 ANS.
b) 0,24 Münzen und Medaillen AG, Basel (cast ANS).
c) 0,23 Münzen und Medaillen AG, Basel (cast ANS).
d) 0,22 Münzen und Medaillen AG, Basel (cast ANS).
e) 0,22 Münzen und Medaillen AG, Basel (cast ANS).
f) 0,25 Münzen und Medaillen AG, Basel (cast ANS).
g) 0,14 Münzen und Medaillen AG, Basel (cast ANS).
h) 0,19 Münzen und Medaillen AG, Basel (cast ANS).
- P. 111 Similar.
a) 0,28 Münzen und Medaillen AG, Basel (cast ANS).

Hemitartemoria
c. 540/500-478

GROUP XXXIV

No inscription, no symbol

- 81 A. 81 Griffin's head right, two broad ears.
P. 112 Quar. sq. incuse, raised lines.
* a) 0,056 ANS.
- 82 A. 82 Griffin's head right, two ears, knob, tongue straight.
P. 113 Similar.
* a) 0,095 Balcer Coll., Bloomington, Ind.
- 83 A. 83 Griffin's head right, one ear (?), knob (?), tongue curved up.
P. 114 Similar.
* a) 0,081 ANS.

PERIOD II
c. 478-449 B. C.

Staters
c. 478-470/65

GROUP XXXV

THI /, grain kernel

- 84 A. 84 Griffin seated right, single wing, plain border and exergue, inscription above, symbol in lower right field.

- P. 115 Quar. sq. incuse, rough.
 * a) 11,65 Berlin.
 b) 11,40 Paris. De Luynes 2667, Babelon 1932.

GROUP XXXVI

THION / , grain kernel

- 85 A. 85 Two wings, plain exergue, no border, inscription around, symbol in lower right field.
 P. 116 Rough surfaces.
 * a) 10,90 London. BMC 8.

GROUP XXXVII

THI / , lotus with tendrils

- 86 A. 86 Two wings, beaded exergue and border, inscription above, symbol in lower right field.
 P. 117 Rough surfaces.
 * a) 11,98 Paris. De Luynes 2666, Babelon 1931.

GROUP XXXVIII

THI \ , no symbol

- 87 A. 87 Two wings, beaded border and exergue, inscription around.
 P. 117 Same die.
 * a) 11,83 Berlin.

GROUP XXXIX

No inscription, knuckle-bone

- 88 A. 88 Single wing, plain exergue, symbol in lower right field.
 P. 118 Rough surfaces.
 * a) 11,69 H. Weber 6205; Naville - Ars Classica 7, 1487; Naville - Ars Classica 14, 375; Hess-Leu 36, 278.

GROUP XL

THION \ , tortoise

- 89 A. 89 Two wings, plain exergue and border, inscription around, symbol in lower right field.

- P. 119 Quar. sq. incuse.
 a) 11,75 SNG Copenhagen 1438.

- P. 120. Similar.
 a) 11,44 New York, Metropolitan Museum. Ward 677.

- P. 121 Thick partition lines.
 a) 11,81 Boston. Brett 1941, Warren 1137.
 * b) 11,72 Paris. Platt March 1922, 650.
 c) nwg. Cahn 68, 465.

GROUP XLI

No inscription, tortoise

- 90 A. 90 Single wing, plain exergue, no border, small tortoise in lower right field.
 P. 122 Quar. sq. incuse, badly broken.
 * a) 11,80 Paris. Babelon 1935.

GROUP XLII

THIO \ , grain kernel

- 91 A. 91 Two wings, high haunch, plain exergue, inscription around, symbol in lower right field.
 P. 123 Rough.
 * a) 11,855 Vienna.

GROUP XLIII

THI \ , bottom of right foot

- 92 A. 92 Two wings, plain border, beaded exergue, inscription left, symbol in lower right field.
 P. 124 Similar.
 * a) 11,54 Paris. Naville - Ars Classica 1, 2520.
 b) 11,52 London. BMC 10.
 c) 11,60 SNG von Aulock 2257. H. Weber 6203.
 d) 11,73 Oxford. H. Weber 6204 ex Naville - Ars Classica 4, 870.
 e) 11,621 Munich.

GROUP XLIV

THI ↑ , no symbol

- 93 A. 93 Single wing, plain exergue, no border, inscription (vertical) in lower right field.
 P. 125 Quar. sq. incuse.
 * a) 12,15 Paris. De Luynes 2665, Babelon 1930.

GROUP XLV

THI ✓, two olive leaves

- 94 A. 94 Plain exergue over «tongue and dart», plain border, inscription above symbol in lower right field.
- P. 126 Quar. sq. incuse, broken.
* a) 11,52 ANS ex J. Hirsch 16, 644; J. Schulman November 1913 (Van Belle), 2538.
- P. 127 Similar.
a) 11,66 Paris. Babelon 1936.

GROUP XLVI

M / AZ →, stag's head

- 95 A. 95 Two wings in four parts, no border, plain exergue, M to l., AZ below body, stag's head l. in lower right field.
- P. 128 Quar. sq. incuse, rough surfaces.
* a) 11,82 Berlin.
b) 11,921 Berlin.
c) 12,00 Hague.
d) 12,02 Cambridge. McClean 8343 ex Rollin et Feuadent May 1910, 547.

GROUP XLVII

AM ←, no symbol

- 96 A. 96 Two wings in four parts, two ears apart, no border, heavy beaded exergue, A below body, M to r.
- P. 128 Same die.
* a) 11,967 Munich.

GROUP XLVIII

No inscription, forepart of winged horse

- 97 A. 97 High haunch, two wings, plain exergue over beaded line, beaded border, symbol in lower right field.
- P. 129 Quar. sq. incuse.
* a) 11,94 London. BMC 6.

GROUP IL

TH |, no symbol

- 98 A. 98 Two plain wings, head back, no border, plain exergue, inscription (vertical) in lower right field.

P. 130 Rough and broken.

- * a) 11,617 Munich.
b) 11,35 Cast in Winterthur (Bompois).

GROUP L

No inscription, dolphin

- 99 A. 99 Two wings, eye forward on beak, plain exergue, no border, dolphin l. and down in lower right field.
- P. 131 Rough.
* a) 11,58 Berlin.

GROUP LI

No inscription, owl

- c. 470/65-449
- 100 A. 100 Two wings, slight knob on beak, symbol in lower right field.
- P. 132 Quar. sq. incuse, smooth surfaces, lines indented.
a) 11,61 Naville - Ars Classica 1, 2518.
* b) 11,70 Helbing January 1930, 313.
c) 11,84 J. Hirsch 16, 643; Naville - Ars Classica 7, 1489.
d) 11,62 Bourgey June 1959, 501.

GROUP LII

No inscription, swan

- 101 A. 101 Similar, symbol in lower right field.
- P. 133 Similar.
* a) 11,91 Boston. Brett 1939, Warren 1135.

GROUP LIII

THION ✓, grape cluster and leaf

- 102 A. 102 Plain exergue, inscription around, symbol in lower field.
- P. 134 Similar.
* a) 11,58 Jameson 1517 ex J. Hirsch 20, 2467; Leu - Münzen und Medaillen AG December 1965 (Niggeler I) 392.

GROUP LIV

THION ✓, panther's head

- 103 A. 103 High haunch, two wings in four parts, female griffin, plain exergue over «leaf and tongue» ornament, plain border, inscription around, symbol in lower right field, left forepaw of griffin lowered over symbol.

- P. 135 Similar.
 a) 11,244 Berlin.
 * b) 11,69 London. BMC 19. Babelon 1943.

GROUP LV

THION ✓, ram's head

- 104 A. 104 High haunch, two wings in four parts, male griffin, plain border, inscription around, symbol r. beneath body, left forepaw lowered.
 P. 136 Quar. sq. incuse, alternately fine grained.
 * a) 11,38 London. BMC 18.
 P. 137 Similar.
 a) 11,55 Cast in Winterthur (Lambros).

GROUP LVI

No inscription, satyr's head

- 105 A. 105 High haunch, two wings in three sections, long ear, plain exergue, no border, symbol in lower right field, left forepaw lowered.
 P. 138 Elongated pebbly surfaces.
 * a) 11,85 ANS ex Naville - Ars Classica 1, 2519; Naville - Ars Classica 10, 693.
 P. 139 Similar.
 a) 11,75 Oxford. H. Weber 6202 ex Naville - Ars Classica 4, 871.
 P. 140 Similar.
 a) 11,88 Paris. Babelon 1946.

GROUP LVII

No inscription, satyr's head, double exergue

- 106 A. 106 High haunch, two wings in three sections, large ears, knob, beaded exergue over plain, symbol in lower right field, left forepaw lowered.
 P. 141 Similar.
 * a) 11,53 London. BMC 17.
 P. 142 Similar.
 a) 11,80 Berlin. Rollin et Feuarden-Holzhausen March 1895, 2319.

GROUP LVIII

No inscription, caduceus

- 107 A. 107 Plain exergue, left foreleg horizontal, symbol over left foreleg.

- P. 143 Pebbly surfaces.
 * a) 11,57 London. BMC 16.
 b) 11,80 Hague.

Drachms

c. 470/65-449

GROUP LIX

THION ✓, owl

- 108 A. 108 High haunch, two wings in four sections, left forepaw lowered, plain exergue and border, symbol over left forepaw, inscription around.
 P. 144 Quar. sq. incuse, smooth surfaces, indented lines.
 Similar to PP. 133-137.
 * a) 5,276 Berlin.

Triobols

c. 478-470/65

GROUP LX

T, lotus with tendrils

- 109 A. 109 Single wing in three sections, inscription (vertical) left of body, symbol in lower right field.
 P. 145 Quar. sq. incuse, major indentation in each sq.
 * a) 2,60 Egger 39, 1912, 319; R. Ratto May 1912, 962.

Tribemiobols

c. 478-449

GROUP LXI

T, griffin's head

- 110 A. 110 Two wings, large ear, beaded exergue, inscription left of head, griffin's head r. in lower right field.
 P. 146 Quar. sq. incuse, striated.
 * a) 1,39 London. H. Weber 6206.
 P. 147 Similar.
 a) 1,31 Oxford. Naville - Ars Classica 1, 2523.

GROUP LXII

T, lotus with tendrils

- 111 A. 111 Beaded exergue, inscription above back, symbol in lower right field.

- P. 148 Quar. sq. incuse.
 * a) 1,38 Leningrad.
 b) 1,29 H. Weber 6210.
 c) 1,38 Egger 46, 1066.

GROUP LXIII

T, olive leaf

- 112 A. 112 Two wings in three sections, beaded exergue, inscriptions left of back, symbol in lower right field.

P. 148 Same die.
 * a) 1,15 Vienna.

P. 149 Similar.
 a) 1,26 SNG Copenhagen 1440.

GROUP LXIV

No inscription, no symbol

- 113 A. 113 Single wing in two sections.
 P. 150 Quar. sq. incuse.
 * a) 1,36 SNG Copenhagen 1439.

GROUP LXV

No inscription, uncertain symbol

- 114 A. 114 High haunch, two wings in two sections, uncertain symbol in lower right field.

P. 151 Similar.
 * a) 1,28 Platt March 1922, 652; Bourgey June 1959, 502.

GROUP LXVI

T, scallop shell

- 115 A. 115 Griffin with high haunch and not seated, two wings in three sections, beaded exergue, inscription over symbol in lower right field.

P. 152 Quar. sq. incuse, striated.
 a) 1,48 London. BMC 13.

P. 153 Similar.
 * a) 1,32 Moscow.

P. 154 Similar.
 a) 1,25 Cambridge. Mc Clean 8347.

Specimen.
 a) 1,28 Cast in Winterthur (Imhoof), obv. only.

GROUP LXVII

T, (?) ivy leaf

- 116 A. 116 Two wings in two sections, beaded exergue with inscription above, symbol in lower right field.

P. 155 Quar. sq. incuse.
 * a) 1,31 SNG Copenhagen 1441.

GROUP LXVIII

No inscription, knuckle-bone, with tendrils or two *litua* above exergue, double wings

- 117 A. 117 Two wings, plain exergue, tendrils or *litua* above exergue, symbol in lower right field.

P. 156 Rough pebbly surfaces.
 * a) 1,73 Vienna.
 b) 1,29 Münzen und Medaillen AG, Basel, List 259, November 1965, 39.
 c) 1,25 SNG von Aulock 2259.
 d) 1,15 SNG Lockett 2852 ex Naville - Ars Classica 1, 2521.
 e) nwg. Cast in Winterthur.

GROUP LXIX

No inscription, apple (?)

- 118 A. 118 Two wings in two sections, left foreleg raised with paw horizontal, apple (?) above exergue.

P. 157 Quar. sq. incuse.
 a) 1,18 Oxford. Naville - Ars Classica 5, 2593.
 b) 1,23 ANS.

P. 158 Rough pebbly surfaces.
 a) 1,42 Vienna.
 b) 1,41 R. Ratto April 1927, 1983.
 c) 1,33 Moscow.

GROUP LXX

T, ant.

- 119 A. 119 Two wings, neck elongated into head, inscription over back, beaded border, symbol u. r. in lower right field.

P. 159 Pebbly surfaces.
 * a) 1,34 London. H. Weber 6207.

GROUP LXXI

No inscription, dolphin

- 120 A. 120 Two wings, beaded exergue, dolphin d. r. in lower right field.
P. 160 Pebbly surfaces, thick partition lines.
* a) 1,22 Vienna.
b) 1,05 ANS.

GROUP LXXII

No inscription, (?) running animal or caduceus

- 121 A. 121 Two wings, (?) border, symbol in lower right field.
P. 161 Pebbly surfaces.
* a) 1,22 H. Weber 6208.

GROUP LXXIII

No inscription, no symbol

- 122 A. 122 Two wings, left foreleg horizontal, plain border, beaded exergue.
P. 162 Similar.
* a) 1,31 Egger 46, 1067.

Obols

Hemiobols

Tritemoria

Tetartemoria

c. 478-449

GROUP LXXIV

No inscription, no symbol

- 123 A. 123 Griffin's head r., high arch to head, ear slightly back, long tongue slanting down with tip up.
P. 163 Quar. sq. incuse.
* a) 0,185 ANS.
- 124 A. 124 Eye high on beak, neck ends in three haired circles.
P. 164 Similar.
* a) 0,226 ANS.
- P. 165 Similar.
a) 0,22 Münzen und Medaillen AG, Basel (cast ANS).

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- P. 166 Similar.
a) 0,22 Münzen und Medaillen AG, Basel (cast ANS).
- P. 167 Similar.
a) 0,13 London.

- 125 A. 125 Eye with prominent eye ridge, knob, hair between ear and knob (?), lower jaw in waved circle.

P. 168 Similar.
a) 0,193 ANS.

P. 169 Similar.
* a) 0,21 Balcer Coll., Bloomington, Ind.

P. 170 Similar.
a) 0,22 London.

- 126 A. 126 Single ear, hair ruff in curls from ear to neck, two hairs on back of neck.

P. 171 Similar.
a) 0,16 Münzen und Medaillen AG, Basel (cast ANS).

P. 172 Similar.
a) 0,22 Münzen und Medaillen AG, Basel (cast ANS).

- 127 A. 127 Similar, beak almost closed.

P. 173 Similar.
a) 0,21 Münzen und Medaillen AG, Basel (cast ANS).

- 128 A. 128 Similar, mouth open.

P. 174 Similar.
* a) 0,20 Hommel Coll., Tübingen. Münzen und Medaillen AG, Basel, List 225, August 1962, 234.

- 129 A. 129 Long pointed ear tipped forward, lower jaw and tongue curved down.

P. 175 Quar. sq. incuse, indented lines.
* a) 0,194 ANS.

P. 176 Similar.
a) 0,22 Münzen und Medaillen AG, Basel (cast ANS).

P. 177 Similar.
a) 0,20 Münzen und Medaillen AG, Basel (cast ANS).

P. 178 Similar.
a) 0,23 Münzen und Medaillen AG, Basel (cast ANS).

P. 179 Similar.
a) 0,16 Münzen und Medaillen AG, Basel (cast ANS).

P. 180 Similar, but smaller than PP. 175-179.
a) 0,19 Münzen und Medaillen AG, Basel (cast ANS).

- 130 A. 130 Large round eye near ear, thin neck, beak raised high, ear up.

P. 181 Quar. sq. incuse, indented lines.
* a) 0,194 ANS.

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- 131 A. 131 Similar, non-descript.
 P. 182 Quar. sq. incuse.
 a) 0,215 Münzen und Medaillen AG, Basel (cast ANS).
 P. 183 Similar.
 a) 0,21 Münzen und Medaillen AG, Basel (cast ANS).
 P. 184 Similar.
 a) 0,28 Münzen und Medaillen AG, Basel (cast ANS).
 P. 185 Similar.
 a) 0,22 Münzen und Medaillen AG, Basel (cast ANS).

Hemitartemoria

GROUP LXXV

No inscription, no symbol

- 132 A. 132 Griffin's head r., one ear, knob, tongue curved down.
 P. 186 Quar. sq. incuse, slightly raised lines.
 * a) 0,105 ANS.

PERIOD III

c. 412—c. 407 B. C.

Staters

c. 412—407

GROUP LXXVI

THIO [N] / , bee

- 133 A. 133 Griffin seated r., two wings straight in three sections, left foreleg horizontal, plain border, inscription around, symbol in upper left field above wings.
 P. 187 Quar. sq. incuse, striated alternately.
 * a) 11,70 ANS. ex J. Hirsch 25, 2224.
 P. 188 Similar.
 a) 11,88 London. BMC 20. Babelon 1944.

GROUP LXXVII

THION →, seal

- 134 A. 134 Two wings straight, left foreleg horizontal, inscription over wings, beaded exergue with seal l. above.

- P. 189 Pebbly surfaces.
 * a) 11,88 London. BMC 21.

- 135 A. 135 Similar, wings and seal larger than A. 134.
 P. 190 Similar.

* a) 11,72 Paris. Babelon 1949.

- 136 A. 136 Similar, head held up and jaw almost closed, beaded exergue with seal above (longer than A. 134 or A. 135), inscription in upper left field.

- P. 191 Similar.
 a) 11,86 Berlin.
 b) 12,04 Berlin.
 * c) 11,69 Berlin.

Drachms

Triobols

Tribemiobols

Obols

Hemiobols

Tritemoria

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ANDREAS ALFÖLDI

DIE MASSEMISSION DES MACER UND DES BUCA MIT
 CAESAR – DICT. PERPETVO VOR CAESARS ERMORDUNG¹

Zur Auswertung der Münzquellen der Geschichte des Jahres 44 v. Chr.

(Beiträge VI, VII, VIII, IX, XIV und XV)²

Im vorhergehenden Aufsatz in dieser Reihe haben wir den Rückseitenstempel des P. Sepullius Macer mit dem irrtümlich im Sinne des Uhrzeigers laufenden *cognomen* MACER besprochen, dessen Koppelung mit verschiedenen auch sonst vorkommenden Vs.-Stempeln Caesars die Gleichzeitigkeit der stehenden und sitzenden Venus-Typen des L. Aemilius Buca mit diesem irregulären Venus-Typus des Macer erwiesen hat. All diese Typen weisen als Titel Caesars *dictator perpetuo* auf; sie stammen noch aus Caesars Lebenszeit, einschließlich der Vorderseite mit der über den Kopf gezogenen Opfertoga des *pontifex maximus*. Dieser Querschnitt durch eine gegebene Zeitspanne jener Denarprägung hat uns schon ermöglicht, die unerhört ausgedehnte Massenproduktion zu erfassen, die in der ersten Märzhälfte für die Geldversorgung der für den Partherfeldzug konzentrierten Expeditionsarmee stattfand. Diesmal kommen wir zur Erörterung der regulären Prägung jener Wochen, in denen die technische Leistungsfähigkeit der stadtrömischen Münze bis zum äußersten angespannt wurde.

Über die *unzertrennbare Verflechtung* der diesmal behandelten Einzeltypen unterrichtet am genauesten die graphische Darstellung S. 74, auf der die obere Hälfte der Kreise stets den Stempel der Vorderseite, die untere Hälfte den der Rückseite angibt. Es handelt sich um folgende Typen:

Typus VI Vs. CAESAR – DICT. PERPETVO. Kopf mit Kranz n. r.
 Rs. P. SEPVLLIVS – MACER / . Venus mit Victoriola auf der ausgestreckten rechten Hand, auf ihr langes Szepter gestützt n. l. stehend. Am unteren Ende des aus einem Perlstab bestehenden Szepters ein Stern, dessen Strahlen absichtlich in Anzahl und Form verschieden gestaltet sind.

¹ Gedruckt mit Unterstützung der Stiftung der Münzen und Medaillen AG zur Förderung der numismatischen und archäologischen Forschung.

² Bisher erschienen sind die Beiträge I–V, X, XI, XII, XVI und XIII. Jahrb. d. Bern. Hist. Mus. 41 bis 42, 1961/62, 27 ff. sowie SM 13, 1964, 29 ff.; 13–14, 1964, 65 ff.; 15, 1965, 29 ff.; 16, 1966, 4 ff.; ebd. 145 ff.; 18, 1968, 57 ff.; 19, 1969, 1 ff.